REMARKS

Claims 1, 3-7, 9 and 11-23 are in this application and are presented for consideration. By this Amendment, Applicant has amended claims 1, 3-7, 9 and 11-13. Applicant has canceled claims 2, 8 and 10. New claims 14-23 have been added.

Claims 1-9 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Reinhard (US 6,280,418) and further in view of Caizza et al. (US 6,840,291).

Applicant has amended claim 1 according to the allowable subject matter noted in the Office Action. Specifically, Applicant has amended claim 1 to include the features of claims 2, 8 and 10. Accordingly, claims 2, 8 and 10 have been canceled. It is Applicant's position that claim 1 is allowable as now presented.

Claims 11-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Giebel et al. (US 5,433,705), and further in view of Whitney (US 4,220,151).

The present invention relates to a syringe cylinder. The syringe cylinder comprises a membrane that is integrally connected to a cylindrical wall of a syringe connection to form a unitary syringe cylinder structure. The membrane and the syringe cylinder structure are formed as one piece by plastic injection molding. This provides particular advantages regarding the sealing of the fluid located within the syringe connection. The fact that the membrane is integrally connected to the cylindrical wall of the syringe connection is significant in the present invention because it allows the contents of the syringe to come in contact with one and the same plastic. This is particularly advantageous since it reduces the chances of the contents of the syringe, which is normally medicine and the like, from becoming contaminated. Further, the membrane being integrally connected to the cylindrical wall of the syringe connection significantly reduces manufacturing costs since multiple parts do not need to be produced. The prior art as a whole fails to disclose such features or advantages.

These features in combination are neither taught or suggested by the prior art as a whole, including Giebel et al. and Whitney. The references as a whole fail to teach and fail to suggest the combination of features as claimed. The prior art fails to suggest the novel combination wherein a membrane is integrally connected to a cylindrical wall of a syringe connection piece. This advantageously provides a tight seal that prevents fluid from leaking out of the syringe. The invention presents a novel combination of features and achieves extremely good sealing features based on the combination of features claimed.

Giebel et al. is concerned with an infection-preventing catheter arrangement. The arrangement comprises a plug cone 7 that is closed at it stip with a membrane 8. As clearly shown in Figure 1a and Figure 1b of Giebel et al., the membrane 8 is not integrally connected to the plug cone 7 to form a unitary, one-piece structure. This disadvantageously increases manufacturing costs as well as safety risks since two separate pieces must be produced. This significantly increases the chances of the pieces becoming contaminated. In contrast to Giebel et al., the membrane of the present invention is integrally connected to form a unitary syringe cylinder structure. This advantageously reduces the risk of the contents of the syringe being contaminated since the parts are produced from the same plastic and not from multiple pieces of plastic that are separately manufactured. This also provides particular advantages regarding the sealing characteristics of the syringe connection piece. Giebel et al. fails to disclose such advantages since the membrane 8 is not integrally connected to the plug cone 7 and does not form a unitary structure with the plug cone 7. As such, the reference fails to teach and fails to suggest important aspects of the claimed combination.

Whitney takes a very different approach from Giebel et al. Instead of worrying about reducing the chances of infection in a syringe as in Giebel et al., Whitney discloses a disposable Luer lock syringe with a needle connector having a grooved collar having sufficient rigidity for a fluid-tight connection and sufficient flexibility to allow fracturing of the connector after the syringe is used. Giebel et al. provides no suggestion for a membrane integrally connected to a cylindrical wall of a syringe connection piece. The references do not provide teachings and do not provide suggestions which render Applicant's claimed combination obvious. The prior art as a whole does not provide teachings or suggestions with regard to the claimed combination. Accordingly, favorable consideration of claim 11 as now presented and all claims that depend thereon is requested.

Applicant has added new claims 14-23. New claim 14 is based on amended claim 11 and provides for the ring of the syringe connection piece. New independent claim 15 has been added to highlight the snap connection of the cap as it moved over the ring of syringe connector element. New claims 16-23 are based on new independent claim 15 and provide for the features of the allowable subject matter noted in the Office Action. Applicant respectfully requests that the Examiner favorably consider new claims 14-23 as presented.

Favorable consideration on the merits is requested.

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